REMARKS

The Examiner is thanked for her courteous acknowledgement of the claim to priority, the receipt of the certified copy of the priority documents and the information disclosure statement.

The specification has been corrected at pages 15 and 17 in response to the Examiner's objection.

Claims 1-6, 8 and 12-14 were rejected under 35 U.S.C.§103(as) as being unpatentable over Nakamura et al. '751 (Nakamura '751); claims 1-6,8 and 12-14 were rejected under 35 U.S.C.§103(as) as being unpatentable over Hayashi et al (Hayashi); 1-6, 8 and 12-14 were rejected under 35 U.S.C.§103(as) as being unpatentable over Nakamura et al.'282 (Nakamura '282 and; and 1-6, 8 and 12-14 were rejected under 35 U.S.C.§103(as) as being unpatentable over Ishibashi et al. (Ishibashi).

Reconsideration is requested.

The optical glass of the invention comprises various components and the inventors of the present invention have proposed, in claim 1, the index of $(BaO)+(Nb_2O_5)/\{(TiO_2+WO_3) \times 3 + Nb_2O_5+Bi_2O_3\}$ which determines magnitude of transmittance in the short-wavelength region as being necessary for the optical glass of the present invention. In this argument, this index is referred to as "CI".

In the index CI, the component (BaO) which increases transmittance in the short-wavelength region is provided in the numerator and the components (TiO_3, WO_3 and Bi_2O_3) which decrease the transmittance are provided in the denominator and in addition, the component (Nb_2O_5) which increases or decreases the transmittance according to its concentration, is provided both in the numerator and the denominator. Since TiO_2 and WO_3 exert a particularly strong influence, the coefficient 3 is given to these components to provide a balance with the other components. The concentrations of the respective components in this index CI are expressed in mass %.

On the basis of the CI values calculated from the examples as described in Tables 1 and 2 of the present specification and test values of G and R of the ISO Color Contribution Index, the CI values have been plotted on the horizontal axis and R values on the vertical axis of the attached Fig. 1 ; CI values have been plotted on the horizontal axis and G values

have been plotted on the vertical axis of Fig. 2. It is apparent from the attached Figs. 1 and 2 that both of the values G and R have a strong negative correlation with the index CI.

Page 3, lines 18-20 of the present specification, points out that the higher the transmittance in the short-wavelength region of visible rays are, the smaller are the values of G and R when the value B of the ISO Color Contribution Index is 0. Therefore, in order to obtain an optical glass having such low values of G and R, the CI index becomes an important factor for selecting a glass composition which can attain such values for G and R. That is, the basic glass composition described in claim 1 is necessary but the proportions are to be selected according to the CI index in order to obtain an optical glass which attains the object of the present invention. The ratio of $(BaO)+(Nb_2O_5)/\{(TiO_2+WO_3) \times 3 + Nb_2O_5+Bi_2O_3\}$, that is recited in claim 1 as the means to be used to calculate the specified CI index, is an indispensable factor for producing the optical glass of the present invention. As a result of laborious studies and experiments made by the inventors of the present invention, it has been found, for the first time in the industry of manufacturing optical glasses, that this index which defines ratios between the components of the glass composition, in addition to the recited ingredients of the composition of the glass, enables one to produce a desired glass which achieves the object of the present invention on a stable production basis.

The Examiner has cited four patents which are identified above as having overlapping glass compositions but none of these references discloses or even suggests this important, indispensable limitation of the present invention, that is, the index CI is greater than 1. Accordingly, failing to have defined the CI index as an indispensable condition in determining the glass composition, these references cannot obtain a glass achieving the object of the present invention on a stable basis, because the CI index is not an optical property resulting from the glass composition but is a ratio of components of such glass compositions which can be determined freely by the designer of the optical glass. The Examiner has selected numbers from Hatashi which fall within the mol% ranges of Hayashi but do not represent an actual example of Hayashi and after converting these numbers to weight % has calculated a CI value of 1.1. However, since the numbers selected by the Examiner do not reflect an actual example, they could only be selected by reviewing the text of the present application. The actual examples of Hayashi appear not to have a CI value which is greater than 1 and therefore Hayashi fails to disclose or suggest that the CI value is indispensable for achieving low G and R values.

Example No. 10 of Ishibashi has a CI value of 1.04. However, this example comprises PbO in its composition and therefore is quite different from the optical glass of the present invention which is free of Pb. From this fact, it is believed that the glasses of the four

references cannot obtain such low values of G and R which are sufficient for achieving the transmittance in the short-wavelength region which is the object of the present invention.. Thus, the present invention is not obvious from anyone of the cited references or combinations thereof. which fail to disclose or suggest the combination of the glass composition and the index CI which is an indispensable factor for obtaining a glass for achieving the object of the present invention. For these reasons, it is requested that the rejections of record be withdrawn.

The allowance of claims 10 and 11 is gratefully acknowledged as is the indication of the allowability of claims 7 and 9.

An early and favorable action is earnestly solicited.

Respectfully submitted,

James V. Costigan
Registration No. 25,669

MAILING ADDRESS
HEDMAN & COSTIGAN, P.C.
1185 Avenue of the Americas
New York, New York 10036
(212) 302-8989

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